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ELECTRICITY on the FARM

JUL 7 1941

JULY 1941

THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

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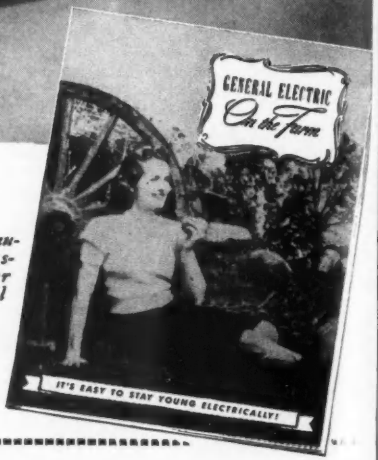

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Editor's Chat

MILKO VS. BACTERIE AL

Out in Cowie's arena the country will see one of the big prize bouts of the season during the month of July. Milko is scheduled to meet Bacterie Al.

This year, the bout will be especially critical. Many of the Milko boys have gone into the Service. Most of Bacterie's gang, while packing a great punch, have had some sort of physical defect or infection which has kept them out of the Service. They are in Bacterie's camp, and keeping him fed up and groomed for the summer season. It is well known that he thrives best in hot weather. When visiting his training camp recently, there has always been sort of an under cover chuckle which leaves one with the impression that Bacterie has something up his sleeve to pull this summer,—and probably something dirty.

Milko has been well supported. The price of seats for the bout have been going up steadily. There has been a big demand from England for Cheese Circle and certain condensed sections. Although constitutionally strong, Milko must be treated right if he's to "bring home the bacon." He has a sensitive nature and usually makes a bad showing when carelessly surrounded by the unwholesome, insanitary conditions under which Bacterie Al thrives.

Encouraging to Milko fans are some of the new faces being introduced in the training camp with much promise. For instance, the new electric water-boy is much more sanitary and efficient than the old pump handler; and he's always on the job, even though he does spend quite a bit of time chinning with the dames. He seems to be able to keep everybody happy. Then there's Coolo, the trainer. The ice man and the spring house give him the icy stare, but he is doing a real job. Milko keeps 20 per cent cooler and always even tempered and there is less muss, less labor, and camp expenses have been reduced. One of the lesser known, yet most valuable helpers in the camp is Steri Lizer. He is a "hot number" and painlessly and unostentatiously knocks any of Bacterie's gang into a cocked hat if they come prowling around the camp trying to bore-in on Milko. Steri keeps the game clean. He relieves the promotors of a lot of worry over phony come-back bouts and is very well received by intelligent Milko fans and the Boxing Commission.

It looks like a great summer for the promotors. Good prices, big demand, plenty of feed. If the new camp crew gets into action quick enough to offset the loss of old workers, all should be merry. The sports writers are for Milko and they have a lot of faith in the new electri-crew.

WORMS

The Lord put worms down here for some good reason. We used to think it was to go fishin' with and for robins to pull out of lawns after spring rains. They also helped to develop girlish screeches; and once on the advice of an old medicine man I tried making salve out of fat ones by frying them. But we have learned more. Scientists in California and in Holland have pinned down some of the work that worms do and put it on paper. In nature's "bio-kinetic" process of maintaining soil fertility, worms play a major role. With enormous appetites and a ready acceptance of soils and all types of decaying matter including leaves, grass and wood, the earthworm pulverizes great quantities of these materials and turns them out as a valuable, fine, productive humus. Furthermore, he makes miles of passageways which serve to aerate and drain the soil. Dr. Oliver, in California, has found that worm action promotes a decidedly vigorous growth of plants and that these worm-soil plants are much less susceptible to disease. Different families of earthworms have different traits and characteristics. He is hybridizing them to get "go getter" diggers with strong reproductive tendencies. Already soils are being restocked with worms bred to survive under adverse conditions. Once more, we *return to nature* with a "go ahead—I discovered you" permit from *science*.

No need for lights for egg production. Both male and female worms produce eggs—and by the millions. But maybe the "idea men" will find a place for incubators, brooders, hotbeds or cold storage; or perhaps neon signs at roadside stands to advertise worm droppings as "Bio-Kineticised Humus—25c per Pound."

George Kable

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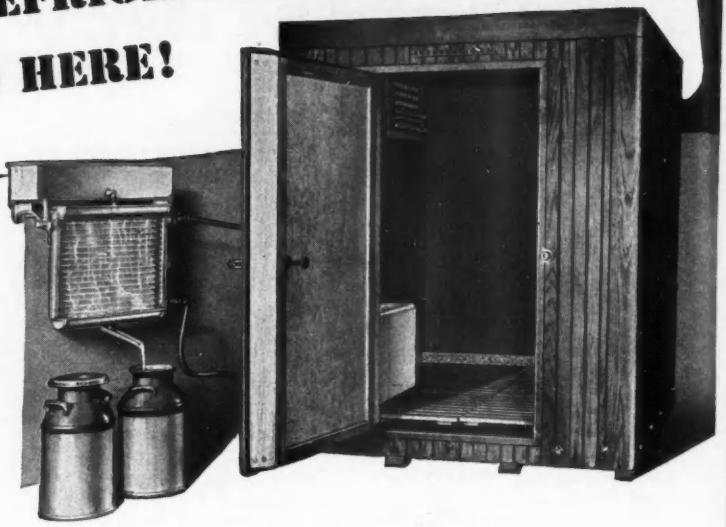

With this Walk-In Cooler you can chill your milk over an aerator, then place in bottles or cans and hold. The laminated, close-fitting doors —3 layers of wood glued and doweled together—will keep their shape over long periods of service. Sizes from 110 to 572 cubic feet capacity.

New porcelain interior of this 45 cubic foot Reach-In Cooler has well-rounded corners for easy cleaning. Capacity is nearly 7 times that of usual size household box. Ice-cube unit, dome, or gun cooler is optional.

See the New INTERNATIONAL Walk-In and Reach-In COOLERS

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Heat leakage is held to an absolute minimum. All units are insulated with 4 inches of fiber-glass—which means *better refrigeration* at *less expense* than ever before.

Snug-fitting doors are made of laminated, kiln-dried lumber—an important item, typical of the quality construction throughout this new equipment.

Reach-In units feature highest-grade porcelain interiors; porcelain or enameled wood exteriors.

Several kinds of cooling units are available for both types of coolers—you can choose the one that best fits your needs. See the nearest International Harvester dealer or write for the new International Refrigeration catalog.

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INTERNATIONAL REFRIGERATION

COOLERS BOOST EGG INCOME

By W. C. KRUEGER
Agricultural Engineer,
New Jersey State College

A RURAL banker and a county agent are showing Jersey poultry farmers how to boost egg income 60 to 90 cents a case. They are doing it with a simple egg cooler made of an electric fan blowing air through a trickle of running water.

It all started when William J. Kinnamon, Cashier of the Hunterdon County National Bank and Chairman of the Agricultural Committee of the New Jersey Bankers' Association, asked County Agent Dwight M. Babbitt for suggestions for closer banker-farmer cooperation. Babbitt knew that many poultrymen were selling eggs at two to three cents per dozen under the price of U. S. Extras, and that cooling and holding conditions were largely responsible. So why not a demonstration of recommended equipment and practice? Kinnamon, who appreciates the importance of his agricultural business, and being progressive and alert for ways to improve farm income, welcomed the idea. As a result, the bank financed the construction of three egg colors designed by County and Agricultural College Extension men to meet local requirements.

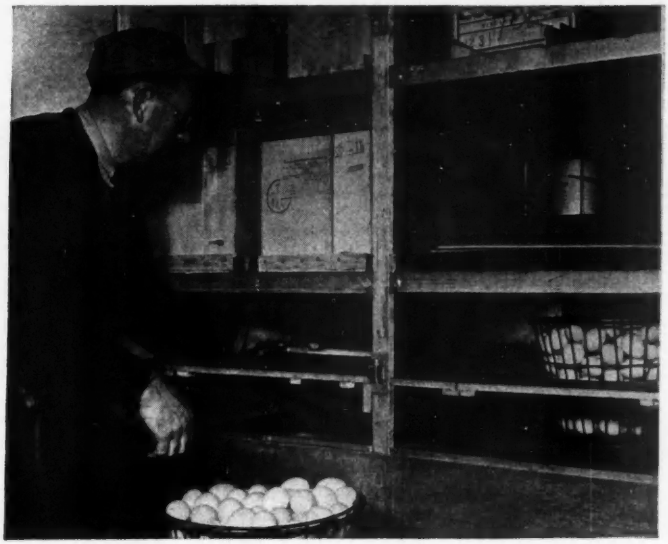
Dimensions of Cooler Unit

The cooler consists of a box 20 in. wide, 16 in. high and 4 ft. 8 in. long, closed at one end and with three 12½ in. beveled round holes cut in the top board. A cross member under each hole supports a wire egg gathering basket so it projects about 1/3 above the box top. The fan unit is mounted in a box of the same cross-section and 1 ft. 9 in. long. The fan is an ordinary 8 in. room type ventilating fan. A hole is cut in the air tight end partition just large enough to admit the fan blades. This tight partition and close fitting fan is necessary to draw air through the evaporator section, which is 3 inches thick, enclosed on both sides with hardware cloth and loosely filled with excelsior. A ½ inch copper pipe perforated with eighteen 1/32 inch holes along the top is laid across the open top of the excelsior unit and is supplied with water through a stop cock adjusted to a slow drip. The evaporation from this wet excelsior cools and humidifies the box. The three parts may be held together with hooks or can be built as one unit. Close fitting lids should be supplied for two of the box openings for closure when only one container of eggs is being cooled.

Three poultrymen gave the coolers a try. All fell just a bit short of regularly making the U. S. Extra grade and that extra two to three cents a dozen.

Two of the units were placed on the Louis Diemert farm at Pittstown and the Earl Hartpence farm at Pleasant Run in rooms partitioned off from their basements. The enclosed rooms helped to maintain

Left: The New Jersey evaporative cooler before the sections were assembled. Egg holder section at left; fan unit on floor, showing how close the fan blades should fit the hole in the partition; and above, the cooler section 3½ in. thick and filled with excelsior on which water drips from the drilled pipe along the top. Right: Louis Diemert is happy about it. On the floor at the left is his three-basket egg cooler. The lids fit tight to keep the cool air from blowing out any place except through the eggs. One hose goes to the excelsior section in the cooler; the other to the overhead trough into which burlap bags dip for cooling and humidifying the small egg room.



The Erville Larason cooler. Filled cases in storage at upper left; space for precooling cases at upper right; and eggs being cooled in baskets at bottom. Note the angle-iron slides for baskets and cases.

uniform temperature and humidity conditions for the packed egg cases. The third unit on the Howard Larason farm near Delaware, was built as part of a cabinet which also enclosed the water supply pressure tank, used for additional cooling effect, and ten egg cases.

Cost of each of the two coolers and their enclosing storage rooms approximated $45.00. The Larason cabinet cooler, with angle iron slides for two baskets and ten cases also cost about $45.00.

Earl Hartpence reports an average of 90 cents a case increase as a result of higher grade classification at the egg auction due to better cooling and holding practice. This in spite of the fact that, "I always used to cool the eggs and store them in an earth floored cellar apart from any heater—conditions which we poultrymen considered ideal."

Louis Diemart formerly kept his eggs in the cellar in a corner of the furnace room but winter conditions were too dry and warm and in the summer the light airy cellar was not cool enough. His 1400 birds at 50 per cent average production have been netting about $8.00 a week extra as a result of his improved cooling.

Howard Larason and his son Erville report an increase of $39.40 between August 26 and December 30 in their egg returns based on previous grade price levels. Eight to ten kilowatt-hours is the maximum that the ventilating fan uses per month. The Larason experience is particularly interesting because the eggs had been gathered in wire baskets, had been placed for cooling on a concrete basement floor practically over an open spring flowing clear cold water the year round. "I realize now," Mr. Larason admits, "that floor temperatures at best are not uniform and that packing the cooled eggs into relatively warm and bone dry containers is not the best practice." That little item of precooling and humidifying the empty cases before packing looks pretty important in view of results.

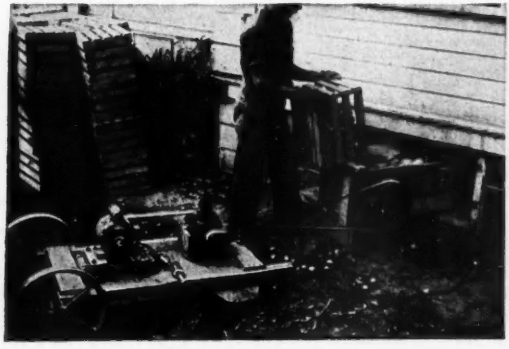
Prof. F. P. Jeffrey at the New Jersey College of Agriculture Poultry Department, emphasizes that you cannot improve eggs but that a lot can be done to *keep* them good. Retaining this original quality, he says, calls for cooling within a few hours to 50°or 60° F., with a maintained relative humidity of 75 to 80 per cent during the storage period. He found a deterioration of 30 per cent in two days when held at 80° but only 8 per cent in fourteen days at 45°. The high relative humidity slows evaporation, keeps the air cells small and prevents the mottling so characteristic of dry storage conditions.

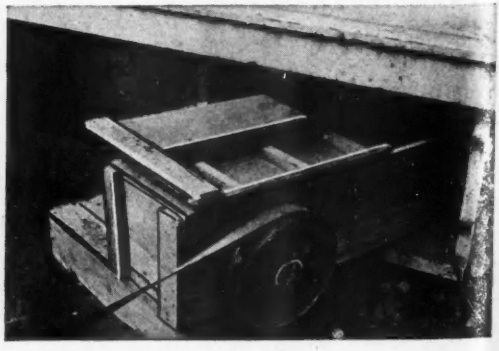
—I'm proud I am a farmer—

HOMEMADE POTATO CONVEYOR

By R. G. HARVEY

Mr. H. D. Forward, Jr. of Eldridge, N. Y. stores potatoes in the basement of his house. In order to fill the basement without too much handling and carrying of potatoes, he has built the conveyor shown in





the picture. The conveyor consists of a canvas belt running over wood rollers at each end, and having 2" x 2" cross strips nailed to the belt to hold and carry the tubers. The conveyor is placed through the small cellar windows and used as shown, although it may also be used for elevating potatoes and for other jobs of conveying.

The motive power is a ¼ hp capacitor motor driving through an old Chevrolet transmission used as a speed changer and reduction gear. Mr. Forward says the arrangement saves a great deal of labor.

WATERED HOPS

Increased Returns in One Year Paid for Irrigation Equipment, Plus $8,000 Profit

By BEN MAXWELL

OREGON hops, which contribute a large share of the hop flavor in the nation's beer supply, grow more profitably and abundantly under supplemental irrigation. Until several years ago very few Oregon hop fields were irrigated. Last year Harry Thacker adopted overhead irrigation in the 150 acre Williams & Thacker yard near Salem. Two two-inch irrigations increased the 1940 yield more than 480 bales over the 1939 production of 897 bales.

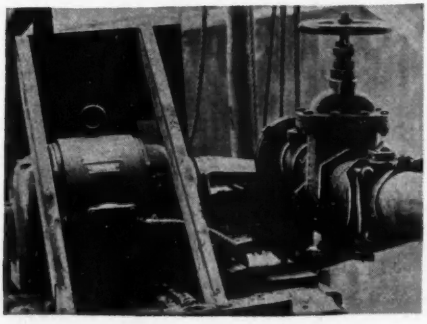
River water from any one of five pumping stations is forced by a direct connected centrifugal pump and 30 horsepower motor through a 6 inch main, 4 and 3 inch laterals to 38 one inch risers where 20 gallons per minute are delivered through each sprinkler head under 50 pounds pressure. Two transformers mounted as a portable wagon outfit are quickly moved to any pumping station.

Six men alternating in 12 hour shifts irrigate 12 acres each 24 hours with approximately a two inch depth of water.

The cost of each irrigation is about $3.30 an acre of which $1 is chargeable to electric power.

Total costs for the complete system including pump, pipe, motor and power line for this 150 acre hop-yard was under $4,000. Mr. Thacker figures that the 1940 yield of 1,381 bales as compared with 897 bales for 1939 netted him an increase of about $8,000 after paying for the irrigation and the increased cost of picking and drying the larger crop.

Each 24 hours these sprinklers put a two-inch depth of water on twelve acres of hops. The cost is three dollars per acre per irrigation, of which one dollar is for electric power.



The 30 h.p., three-phase motor direct connected to the centrifugal pump shown supplies 38 sprinklers with 20 gallons of water per minute each at 50 pounds pressure.

Pennsylvania's Quality Egg Program

THE Agricultural Extension Service of Pennsylvania State College in their Quality Egg Letter No. 1 have emphasized the following points as being important for the production of quality eggs:

1. Maintain a temperature of under 65° in the egg cellar. Fertile eggs start germ development at about 68°. Molds develop more slowly at low temperatures and there is less difficulty with drying out at temperatures of 50° to 65°. Too low temperatures are undesirable because very cold eggs will sweat when brought into a warmer atmosphere for shipment.

2. Maintain relative humidity of 75 per cent in the egg cellar. This is to maintain a small air cell.

3. Gather eggs three times daily.

4. Cool eggs quickly.

5. Pack eggs daily.

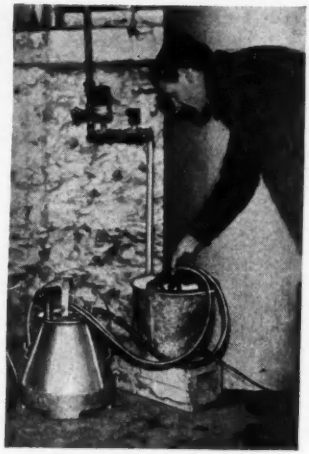
6. Pre-cool egg cases. A dry egg case is a moisture thief. Put cases in cooling room a day or two before using them; but do not store them there indefinitely or they may mold.

7. Market eggs twice a week.

8. Keep birds confined.

In addition, good management, cleanliness, proper feeding and plenty of fresh water are necessary. If there is any tendency to mold in egg rooms, a small house fan to circulate the air may help.

Only sufficient ducks are raised in the U. S. to permit each family to eat a duck every three years.



Scalding Rinse

This Pennsylvania farmer is using his Electro-Pail for giving his milking machine a final scalding rinse. The 1250 watt heating element in the pail heats 11 quarts of water to 180° in about 45 minutes. The pail may be plugged into the ordinary 115 volt circuit. It is handy where small quantities of hot water are needed.

WIRE SIZE SELECTION

THE selection of correct wire sizes in and between buildings on the farm has much to do with the satisfaction one gets from the use of appliances and also with the cost of their operation.

Wire Sizes Between Buildings

Wire sizes between buildings must be computed on the basis of the amount of electricity they are to carry, except that the National Electrical Code specifies that no span of 50 ft or more shall use wire smaller than No. 8, and no span under 50 ft shall use smaller than No. 10. These minimum sizes are to insure against breakage due to ice load and strong winds. The most important thing to be looked out for in farm wiring is *voltage drop*.

Voltage drop is the difference in voltage, or "electric pressure," between the starting point, such as the transformer or meter, and the point of use. All wires offer resistance to the flow of current. If that resistance causes a drop in voltage, the electricity which you are paying for is being wasted in the wire. It heats the wire. But that is not all. When there is a drop in voltage, you do not get the full amount of light from your lamps; heating elements in your range or brooder do not produce their rated amount of heat; and your motors may not come up to speed and deliver their full power. In each case some efficiency is lost,—and it costs money. More will be written on this subject later. Just now it is enough to say that a balance must be struck between the higher first cost of larger wire and the greater operating cost and less satisfactory performance of equipment with smaller wire.

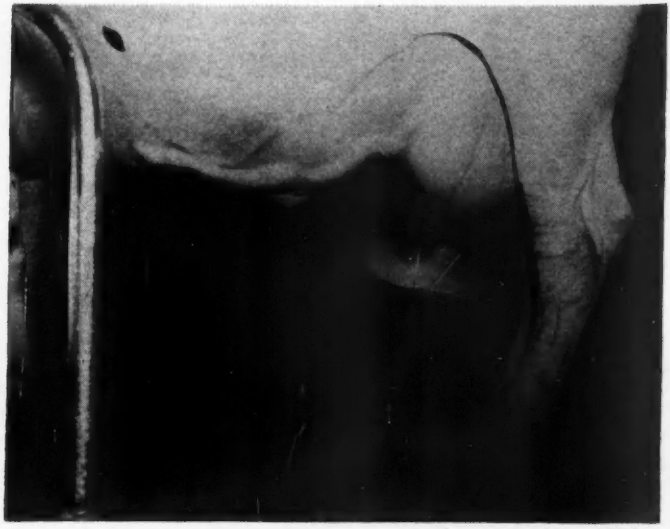
When Using Chart

On the opposite page is a wire selection chart. In using this chart, always remember two things. (1) You will have better service if you use a size larger wire than the chart calls for, especially if the circuit feeds a heating or lighting load. It would also give you a little to spare for the load you may add in the future. (2) Always use as the "distance", the length of wire *from the motor, heater, or other 'load" back to the meter.* For example: You want to know the size wire to use from the barn to the hen house which is 50 ft away. If the barn is 100 ft from the meter and there is 40 ft of wire in the hen house, the 'distance' to use on the chart is 50 + 100 + 40 = 190 ft. If the wire from the meter to the barn is not as large as the chart calls for, and enough larger to care for the load in the barn, it should be replaced.

To get the total load you will have in *amperes,* add the amperes used by *all* of the equipment and lamps on the circuit. Motor amperes may be taken from nameplates. Amperes of lamps and heating devices is found by dividing the total wattage of all the devices by the voltage of the circuit. For a 115 v. circuit

$$\text{Amperes} = \frac{\text{Total wattage}}{115}$$

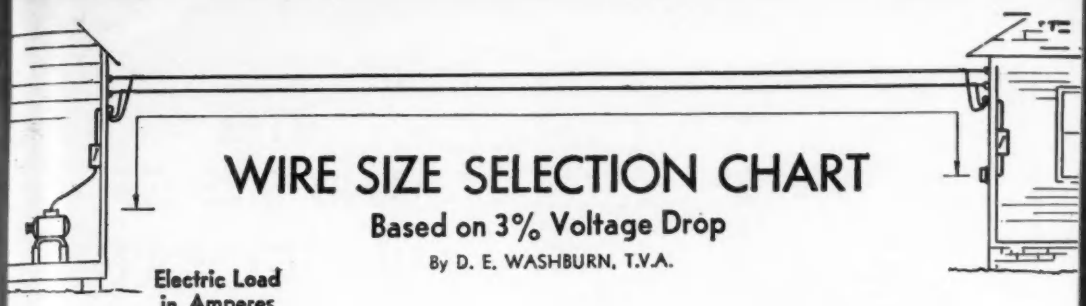
For 3-wire 115-230 volt circuits, the safe method of selecting wire size is to add the total amperes figured for the 115 volt circuit to the total amperes for the 230 volt circuit. Use the 230 volt chart for determining the wire size. Where the 115 volt load is large, it should be balanced on the two sides of the 115-230 volt circuit.



Defense Factory

One of the most marvelous factories in the United States for turning rough, raw materials into a wholesome, sanitary, universally desired product—and a painful, insanitary, pigeon-toed delivery system applied by man. Regular and emergency products: A dozen human foods, chick feed, pig feed, casein airplane glue, plastics, felt hats, cloth for suits—all from milk.

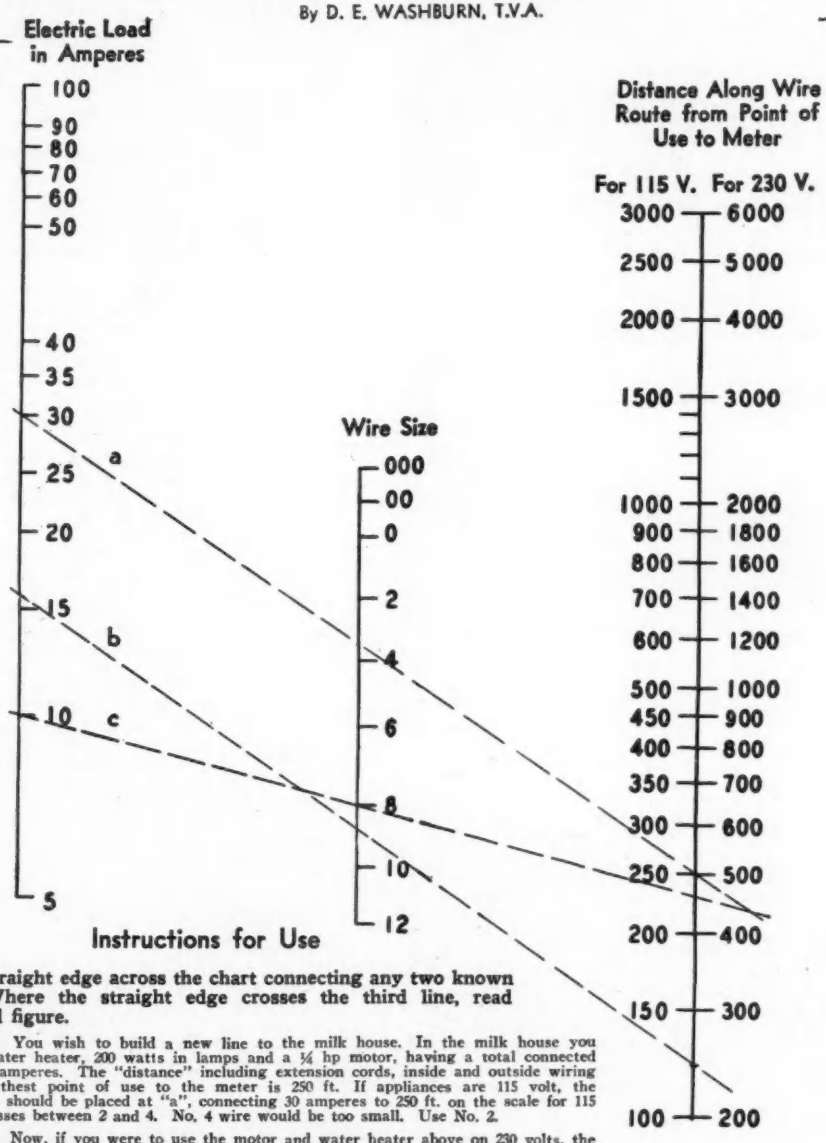
The decline in the number of horses on farms in the past decade was almost 25 percent, and the decline in the number of mules was more than 28 percent.



WIRE SIZE SELECTION CHART

Based on 3% Voltage Drop

By D. E. WASHBURN, T.V.A.



Instructions for Use

Lay a straight edge across the chart connecting any two known values. Where the straight edge crosses the third line, read the desired figure.

Example 1. You wish to build a new line to the milk house. In the milk house you will use a water heater, 200 watts in lamps and a ½ hp motor, having a total connected "load" of 30 amperes. The "distance" including extension cords, inside and outside wiring from the farthest point of use to the meter is 250 ft. If appliances are 115 volt, the straight edge should be placed at "a", connecting 30 amperes to 250 ft. on the scale for 115 volts. It crosses between 2 and 4. No. 4 wire would be too small. Use No. 2.

Example 2. Now, if you were to use the motor and water heater above on 230 volts, the ampere "load" would be only about 16. The straight edge placed at "b" crosses between 8 and 10. Use 3 No. 8 wires.

Example 3. You have some No. 8 wire. Your 115-volt brooder uses 10 amperes. How far away from the meter can you use it. Place straight edge at "c" connecting 10 amperes and No. 8 wire. On the "distance" scale for 115 volts, you will get the answer, 230 ft.

TYPE AND SIZE OF MILK COOLER

Selection of Type and Size Depends on How and When Milk Is Delivered as Well as Amount

Coolers may be placed on the floor as shown above. That is the easiest installation. Or they may be placed in a pit as below for easier lifting of the cans. The pit should be well drained.

AT a recent rural electrification conference at Pennsylvania State College, many milk coolers were on display and "on the carpet". Should one buy a constant-water-level cooler or a conventional type? Is an agitator necessary, or is it warranted if it costs an extra $30? If a farmer produces four cans of milk at night and four in the morning, does he need a four or an eight can cooler?

The answer is: Every farm must be treated as an individual problem. It is not just a matter of personal preference, or of gallons of milk.

Milk-Cooler Selection

Let's consider the four can, night and morning, producer. Suppose the milk is on the truck one hour after the morning milking is completed. The night's milk will be cold; the water will be cold; and there may be some ice built up on the coils. To cool the morning's milk you have a choice of running it over a surface cooler through which tank water is circulated, or providing your cooling tank with an agitator which will cool the milk in the cans in time for hauling. The night's milk would be taken from the cooler, one can at a time as the morning's milk is put in, keeping the water level constant. But that night's milk starts to warm up immediately when it is taken from the cooler.

Now suppose you are on a milk route, and the route is changed. Instead of an hour, it is now three hours before the driver comes. That would give you plenty of time to cool the morning's milk in the tank, either with or without an agitator, but it is too long to have the night's milk standing in a warm room. You might build an insulated dry box to stand the cans in. That would help, but it might be almost as cheap to buy an eight can cooler; or a cooler with space for four cans in flowing water at constant level and the opposite side for four cans at low water level.

In the case where one has four cans in the cooler part of the time and eight cans part of the time, or any different number of cans at different times of the day, the cooling will be inefficient when the cans are only half or two-thirds submerged. The milk in the top of the cans will cool slowly and the bacteria count will jump up. It is desirable always to have the cold water up around the shoulder of the can. You can bring it up by putting in cans of water. It would be better to put in empty cans with some means for holding them down as this would save the cost of cooling several cans of water per day. Or, use a constant level cooler.

The "drop-in" cooling units with small, compact coils and a water circulating pump do not all have capacity for building up a large reserve supply of ice. Because of this, it may be desirable to have a larger water to milk ratio, i.e. more gallons of water in the tank per gallon of milk cooled. Some cylinder coils are large enough to build up an ice bank without freezing the agitator.

The less expensive types of milk coolers may do as good a job of cooling as far more expensive types—if your conditions fit that type of cooler. If they do not, a more costly cooler may be the most economical one in the long run. The type of cooler to buy is the one which fits your particular farm's requirements.

IT IS said of Henry Ward Beecher that, walking the street one winter's night, a poor ragged newsboy asked him to buy a paper. Mr. Beecher spoke kindly to the lad and bought his remaining newspapers. Then, asking the little fellow if he didn't feel cold, Mr. Beecher received this reply:

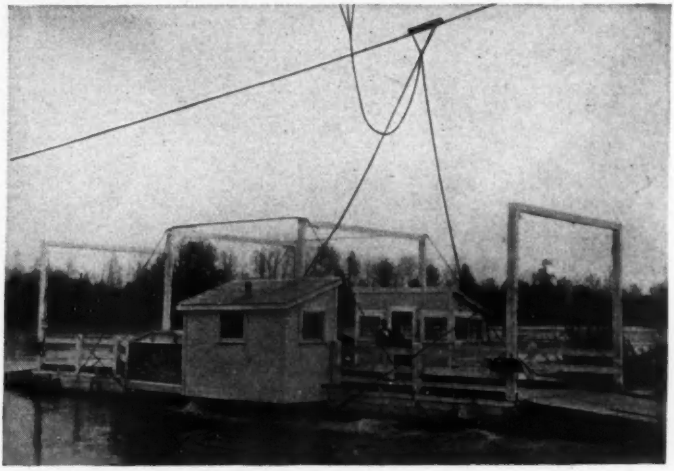
"It was cold, sir, until you came."

PLENTY of people have a good aim in life, but a lot of them don't pull the trigger.

FERRY SERVICE GOES ELECTRIC

By BEN MAXWELL
A Farmer Near the Ferry

A PADDLE-wheel ferry, electrically operated, is in service across the Willamette river between Independence and East Indepedence, rural towns in Western Oregon.



Simple Electric Control

Electric power reaches each of the two 10 hp motors through an overhead trolley. Since each of the 7½-foot paddle wheels is independently geared to a motor that may be stopped, started or reversed as needed, the operator has almost perfect control over ferry movements.

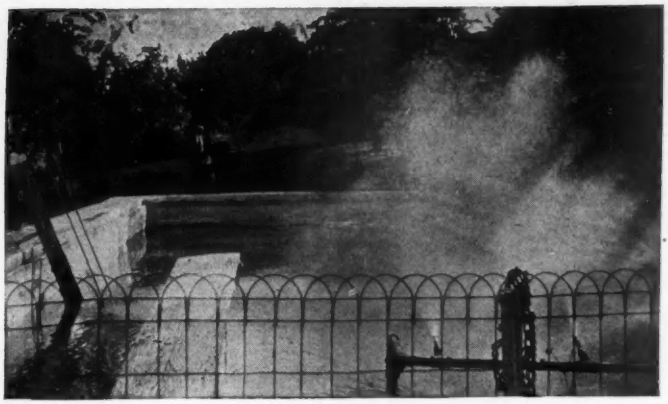
Paddle wheels were adopted for the Independence crossing rather than the familiar screw propeller because the river is shallow at this point and often filled with dirt during freshets.

Claggett 2, as the Independence ferry is called, cost about $5,000 to build and operating expenses average around $300 a month. This includes salaries for two operators and $80 a month for electric power. The ferry is in service from 6 a. m. until 10 p. m. and requires about 10 minutes to complete a round trip crossing of 2,000 feet. It carries eight automobiles or the equivalent.

HAPPY BATHING

THEY seem to be happy about it. The little tank above the sink is one of the new 2-gallon, insulated, temperature-controlled, electric water heaters. It is connected to the cold water line with the rubber tube shown, or a small copper tube, and may be plugged into any electrical convenience outlet. Turn in cold water and hot water comes out. The picture is that of Mrs. Everett Smith, Hughsonville, New York, and her baby. Many of these water heaters have been installed in the territory of the Central Hudson Gas and Electric Co. They cost less than $25, and while they are not as satisfactory as the more expensive plumbed-in, pressure water heaters, they are a great convenience where small quantities of hot water are needed in the home or about the farm.

When there are twins in the family, a double compartment kitchen sink may be very handy. Here are Carolyn Joan and Marilyn Jean MacKinnon of West Roxbury, Massachusetts.



Farm Swimming Pool

This swimming pool is on the farm of C. J. Hepworth & Son, Milton, N. Y. It has a utility purpose in addition to being a swimming pool. It is used as a cooling water storage tank for the refrigeration plant which cools the 45,000 bushel apple storage plant on the farm. Being close to the house and buildings, it also has considerable value as a storage reservoir in case of fire. The spray coming out of nozzles at one side and end is provided for cooling the warm water from the compressors.

Reservoirs similar to this may be used as ornamental pools in yards or as small storage reservoirs for garden irrigation or stock watering. A 1½ or 2 inch motor driven centrifugal pump and some 2 inch canvass or discarded fire hose makes good fire insurance.

A bright, red neon sign that costs no more to operate than a 75 watt electric light bulb has brought a 20 per cent increase in business for Mrs. B. O. Schucking's wayside fruit, flower and farm produce market at Eola Acres near Salem, Oregon. Mrs. Schucking's rural market which, by the way, was awarded a plaque by the national council of state garden clubs for being the most attractive of its kind in Oregon, displays the clear script sign, "Flowers", both in the evening and during daylight hours because it costs so very little for electrical illumination. Cost of the sign installed was $25.

Clipping Notice

"Regulations require that the flanks, tails and udders of the entire dairy herd be clipped before stabling time. Please fill in this form and return to your Station Manger, Abbotts Dairies, Inc."

That is the message on a little yellow card sent to each dairy from which milk is purchased by the Abbotts Dairies of Philadelphia. The illustration of the cow, showing just where to clip, is printed in the upper left corner of the card which also bears this statement: "The entire dairy herd on this farm was clipped in accordance with the shaded area on the sketch. By.....On ..... Signed ....."

Accompanying the card is a sheet telling the requirements for the production of quality milk which includes (1) Clean, healthy herds, properly fed and housed. (2) Clean equipment. (3) Prompt, efficient cooling of the milk. (4) Proper methods—by a personnel interested in milk production.

Color Determines Illumination

Dark walls absorb light just as a sponge soaks up water. A room with dark-colored walls which is not exceptionally well illuminated by daylight requires more artificial light in the evening. With dull dark walls light is dim and struggling. With clean light walls both electric bulbs and daylight spread their radiance to better advantage.

Larger Eggs from Cooler Hens

By protecting hens in the laying houses from high summer temperatures, larger eggs have been obtained, according to advice from the Kansas State College Poultry Department. They say that when the maximum daily temperatures consistently remain above 70°F., smaller eggs are produced than at lower temperature levels. They tell us that the decline in the size of eggs laid in the summer months, of the pullets' first laying year, is due to heat rather than to fatigue caused by several months of heavy egg production, as has long been believed to be true.

Electrical Housekeeping

Edited by GAIL MEREDITH

Food Won't Put Itself Away

IT'S a rare job that can not be improved a little in the doing, even caring for food in an electric refrigerator, which, everyone knows, is a contrivance that practically runs itself. Maybe I'm wrong, but I am willing to bet that if you are hustling about with only a nodding acquaintance with that instruction book that came with the refrigerator, you may be overlooking some quite simple practices that will help you keep your food better and your bills lower.

Do you remember, for example, that paper is practically taboo inside the refrigerator? Putting food away in the paper wrapping is discouraged because paper prevents quick chilling. Food in paper pails or cartons should be transferred to covered dishes of glass, porcelain, or china, or to bowls covered with waxed paper or cellophane held in place with rubber bands.

Paper bags are a double handicap. The paper not only delays the penetration of cold air to the food inside, but the bags spread out all over the shelves, pushing against dishes and jars and hindering the circulation of air throughout the refrigerator. Since the thorough cooling of foods depends largely on the free circulation of cold air, that's bad business.

Except in refrigerators with a high humidity section where the air keeps its moisture, the refrigerator dishes should have snug covers to keep the food from drying out, to keep the odors inside, and to save energy.

I mean electric energy, not yours. The more moisture the cold air picks up and freezes on the chiller, the longer the motor must run to keep the temperature low.

Different foods need different care. After you unwrap your meat, just scrape it and wipe it free of visible dirt, leaving the washing until just before you cook it, since washing drains out the juices. Lay it on the trivet in the meat drawer. If there is more than one layer of chops or steak, use waxed paper to separate them. This trivet lifts the meat so the cold air can flow under and around it, and keeps it out of any moisture gathered on the bottom of the meat drawer.

In refrigerators without a meat drawer, you can put the meat in the pan directly under the chilling unit with a sheet of waxed paper laid across the top, but not wrapped around the meat.

Fish, cleaned and wiped and wrapped in waxed or parchment paper to restrain its odor can go in the meat drawer if it holds no other food. If it does, the fish better lie on the cover for the good of all concerned.

Keep butter and cheese in covered dishes, and milk in tightly covered jars. In fact no beverage should stand open in the refrigerator.

When you bring the vegetables in from the garden, wash them thoroughly and cut away any waste and the inedible tops before you put them away in a covered enamel dish or an oiled silk zipper bag. If the lettuce is wilted, soak it in cold water awhile, then drain it and put it away.

Some folks think tomatoes keep best right on the shelf in the food compartment.

Fruit needs refrigeration to make it taste better and to check ripening. You can chill oranges overnight and squeeze them just before you are ready to serve the juice. It seems one of their valuable food elements escapes rapidly when the juice is exposed to the air so it shouldn't stand long.

Pick over berries and spread them out on a tray or plate. They will keep better if you do not wash them until just before meal time.

Fruits with a strong odor like cantaloupe and pineapple can go into the refrigerator without making everything taste like them if you put them in those zipper bags or wrap them tightly in waxed paper.

Eggs keep best in a wire basket or open bowl that insures good ventilation.

"WHEN YOU WISH UPON A WIRE"

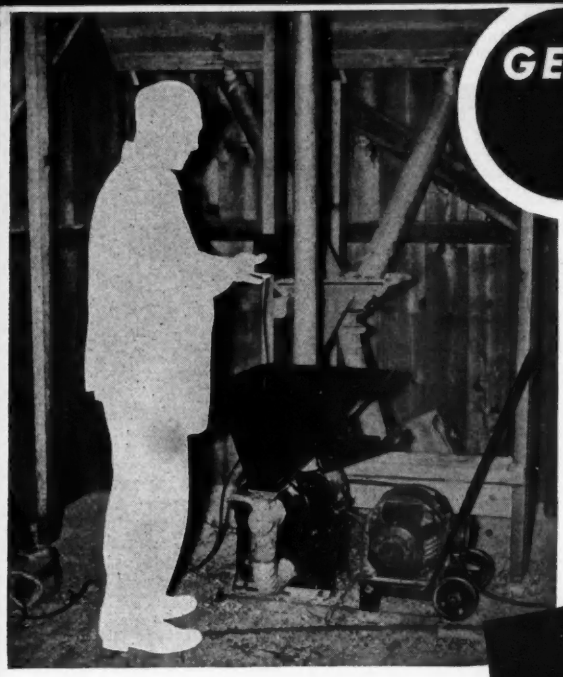
I wish I could cook by the turn of a switch—
No black on my kettles and pans;
No smudge up the side of the wall from the flue
Nor open flame burns on my hands.

No danger from leakage—no blow-ups to fear—
No fumes putting house plants to rout;
And with the low cost of the current to-day
My budget would surely hold out.

I wish that my kitchen kept cool when I cooked—
Not sweltering hot from a fire;
I hope that my dreams will be coming true soon;
I'd surely love cooking by wire.

Mrs. M. J. Galbraith, R4, South Bend, Ind.

GET YOUR WORK DO
with Westingh



When hired help is hard to find and there are too few h
in the day to get everything done—put Westingh
WIRED HELP to work for you. On nearly every f
an inexpensive Westinghouse motor or two can save
hours of backbreaking, time-consuming work every w

Pumping water; turning the cream separator, was
machine or grindstone; mixing feed; washing and t
vegetables; milking; milk cooling and many other
can be done either automatically or in less time
motor-operated equipment. A single portable motor
be all you need. Or, it may be more practical to app
motor permanently to each piece of often-used equipm

1 TO 5 HP PORTABLE MOTO

The Westinghouse Type
2-hp motor illustrated
is used to drive a feed gri
corn sheller, hay hoist,
saw and other equipmen
a Pennsylvania farm.
could you use it on y

Where's the Man in this Picture?

While this Westinghouse Type CR 2-hp motor is grinding feed, the farm owner may be doing chores, working in the field, going to town on an errand or making the most of his time in other ways. But while he is working, the grinder, fed from one overhead bin, fills another with the ground feed. When the supply bin is empty, the motor is automatically turned off.

Make Your Own T

Mount your Westinghouse
on a portable truck and yo
change it quickly from one
another. Plans showing ho
make this truck for a 1, 2, 3 o
Westinghouse motor are you
the asking—just send the co

CUTS COOLING COSTS 78% ... SAVES $81 IN SIX MONTH

—WITH NEW WESTINGHOUSE MILK COOLER

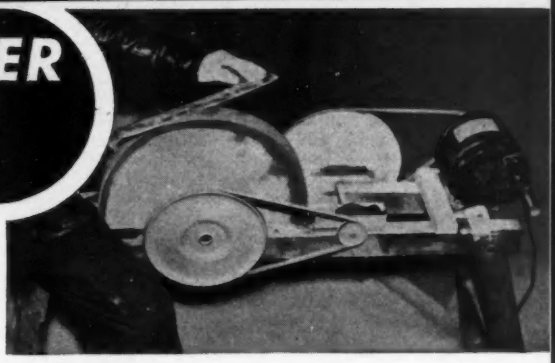
Mr. Fred Lyons and son, Fred

Mr. Fred Lyons of Columbia, Mo., writes—"Of all the farm machinery purchased in my 27 years of farming I have never known anything that paid dividends like my Westinghouse Milk Cooler. In six months of warm weather in 1939 I purchased $93.17 worth of ice. Milk rejected because of improper cooling cost me $8.50. In 1940, I operated my Westinghouse Milk Cooler over a similar period for a total metered cost of $19.87. So you can readily see that the saving will pay for the Cooler in about three years."

Put It In Your Present Tank

New drop-in unit quickly and easily installed in your present tank. Simply cut a hole in the cover and drop the circulator unit in. Plug in and you have modern low-cost milk cooling. Send the coupon for full information and name of your nearest Westinghouse Milk Cooler dealer.

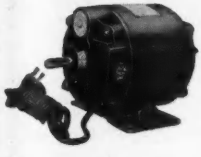
...EASIER...QUICKER ...se WIRED Help



SMALL UTILITY MOTORS

When you count up, you'll be surprised at the number of chores and other work a single portable quarter or third horsepower motor can do for you. You may now be doing this work by hand, or with some other kind of power, more expensive and less convenient than a Westinghouse motor. In either case, you can do these jobs—run tool grinder, farm shop equipment, small corn sheller, seed cleaner or similar equipment—for a penny's worth of electricity an hour with a Westinghouse small motor. Where else can you get so much help at such small "wages?"

TWO BIG VALUES IN SMALL MOTORS

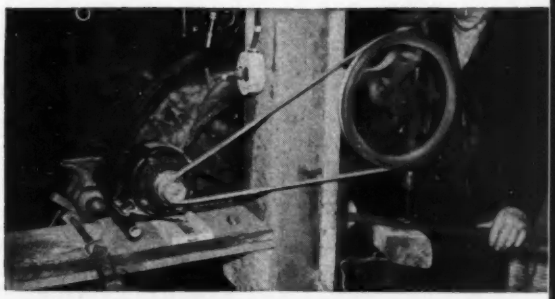


One-third horsepower Westinghouse Type FH, high torque split-phase motor. Equipped with double extended shaft, permanently lubricated ball bearings, 9-ft. cord and plug, "Off-On" snap switch. Manual reset Thermoguard furnishes positive automatic protection against burnouts from overloads.

One-quarter horsepower high torque, Type FH split-phase motor. A high quality motor at a pleasing price. Ideal for running washing machine, grindstone and similar easy-to-start equipment. Complete with 9-ft. rubber-covered cord and plug. "Off-On" snap switch. Attractive green finish.

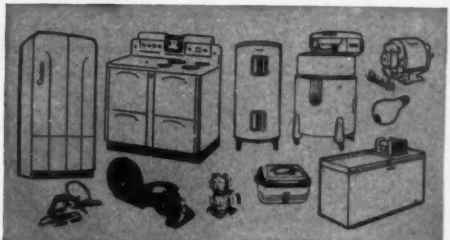
How to make a Portable Mounting for Your Westinghouse Motor

Change your Westinghouse small utility motor from one machine to another without a minute's delay. Bolt a piece of broomstick or iron pipe to the motor base as shown (right). On workbench or machine, fasten two cleats just far enough apart for this mounting rail to fit between. Locate cleats so that the motor, when belted to the driven machine, tips up slightly (below). Thus, weight of motor keeps belt tight.



SEND FOR THIS **FREE** BOOKLET

Gives helpful, useful facts about electric motors on the farm, in simple, non-technical language. Contains plans for making your motors portable. Shows how Westinghouse motors are made burnout-proof with built-in Thermoguard. Send the coupon TODAY.



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Every house, needs
Westinghouse

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Without obligation, please send me:

- ☐ Booklet, *Farm Motors*, and information on items checked below:
- ☐ Refrigerators
- ☐ Ranges
- ☐ Roasters
- ☐ Laundry Equipment
- ☐ Milk Coolers
- ☐ Water Heaters
- ☐ Vacuum Cleaners
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- ☐ Lighting
- ☐ Table Appliances

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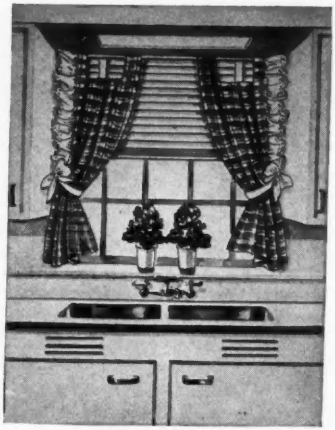
Remember not to overcrowd the shelves. Store only the foods that need refrigeration, and arrange the dishes so there is plenty of room for free circulation of air. These are little things, all of them, but they add up to a good job of refrigeration.

• • •

Pinafore Curtains

THE latest styles in informal curtains are taking their cue from the cute frilly pinafores that led the fashion parade of juvenile



play clothes last summer. Whether you need new curtains for the kitchen, the children's bedrooms, or a playroom, this gay new "suspender" style curtain will be equally appropriate. With modern sewing machine attachments, you can stitch up a pair in an hour or so. Or, better, yet, give the assignment to your young daughter. There's a sewing center in almost every locality where she can learn all the latest sewing short-cuts at little or no expense.

For a regulation window about 72" long, the pinafore curtain and tiebacks to the window sill require only four and three-quarters yards of 36" checked gingham and one-quarter yard of voile for the ruffle trimming.

Cut two lengths of gingham, each 2¼ yards long. At one end of each strip, cut out a twelve-inch square six inches in from the outside edge to form the suspender effect. Turn under all edges of cut-out area one-quarter inch and stitch with one row of stitching. Then cut two strips of voile four and one-half inches wide and 36" long. With the hemmer of your sewing machine, stitch a quarter-inch hem on both long sides of each strip. Using the ruffler attachment, apply one strip to the outside edge of each curtain and down to the half-way point of the curtain sides.

For the stitched down tiebacks, use two strips of gingham, four inches wide and about 40 inches long. Hem the edges of the tiebacks one-quarter inch, top and bottom, with the foot hemmer. Before applying the tiebacks to the curtain, use the gathering attachment to coax in the fullness of the curtain about midway down from the top (or wherever you wish to place your tiebacks). Then, over the gathering, place the tiebacks and stitch top and bottom edges onto the curtain, leaving the ends free for tied bows at the outside edge of each piece.

• • •

Vitamins and Vegetables

ACCORDING to the experts, cheerfulness, bubbling good spirits and a kind nature spring not so much from saintly grace as from an abundance of vitamins in the system.

That simplifies everything beautifully. We can just eat our way to a good disposition—surely the most pleasant way in the world to acquire one. As a first step, there's tomato juice, full of Vitamin C, and wonderfully cool and cooling on a hot day. For instance:

Tomato vegetable cocktail:

1 can tomato juice
1 tablespoon watercress, finely chopped
1 teaspoon chives, finely chopped
1 tablespoon lime juice
1 teaspoon sugar
1 pinch salt

Remove watercress leaves from stems and chop very fine. Combine tomato juice, chopped watercress, chopped chives, lime juice, sugar and salt. Mix thoroughly and chill.

• • •

Learn Your Mixer

IF you have an electric mixer in your kitchen, it will pay you to learn to keep it busy at all the jobs it is built to do.

Its most important task is to save you work. While it is creaming the butter and sugar for a cake, you can sift the flour and grease a cake tin, or you can just sit down and watch it work.

Mixing by motor is quicker than beating with a spoon; it takes only a fraction of the time to do a better job. Using a motor accurately insures uniformly good results. When you beat up a cake by hand, you never beat it twice the same way or just the same length of time. But the speed of the mixer is controlled. When you adjust it to a certain setting and beat your mixture a certain length of time, you can be confident of the same good results every time.

If you haven't already done so, let me urge you to get acquainted with every single use the manufacturer recommends for your machine. And when I say get acquainted with it, I mean not only learning what it is, but how to do it, learning through studying the manufacturer's directions, and trying them out yourself until it is easier as well as quicker and better to do the job with the mixer than it is to do it by hand.

But to make sure that it is going to be easier you must see that the mixer is within arm's reach of your work space, and no more than a cord's length from the nearest convenience outlet.

JULY CONTEST

Somebody is going to win five dollars this month by writing us a letter for our regular monthly letter contest on the subject, "The Most Unusual Use for Electricity I Ever Saw."

All of the letters become the property of the magazine. If we use more than the winning letter, we will pay a dollar for each one we publish. Your letter should reach me by July 31st.

The address is Gail Meredith, 700 S. Mills St., Madison, Wis.

Why I Would Like an Electric Water Heater

(May Contest Winner)

•

If wishes were realities, things might automatically clean themselves; but greasy dishes, pots and pans, milk pails, strainer and cans MUST BE WASHED DAILY, and it takes lots of hot water to do the job thoroughly.

The family washing takes more tubfulls of hot water. Of course there's canning, dad's and John's shaving, Mary's washing out hose and lingerie, and warm water for pigs and chickens in winter. HOUSE CLEANING.

But what gets me most is the family's Saturday night bathing. It's usually, "I wish you'd hurry and bathe, so I can heat more water for John, Mary and myself. Maybe you don't want to go to bed yet, but some one has to bathe first, and the hot water is ready now."

It takes so much time to heat each tubfull. There's no room on top the stove for anything but kettles full of water, and you have to juggle them about to put in another stick of wood and more cobs. Someone usually wants to heat an iron for last minute pressing, if you can find a place on the stove to heat it.

WOULD I LIKE AN ELECTRIC WATER HEATER?

Might as well ask a thirsty harvest hand if he'd like a cool drink of water, or a hungry school boy if he'd like a sandwich.

Less fires to make;
Less carrying of wood and cobs.
Less cleaning up of the dirt they spill;
Less carrying of water, an empty reservoir to fill.
Less filling all the kettles a stove will hold;
Less bossing of others, that sounds like a scold.

Automatic, always ready, clean and convenient. I'd like an electric water heater to save time and labor, and to bring modern comfort to our home.

MRS. M. HENRY,
Road 31, Macy, Ind.

ELECTRICITY SAVED THE DAY

Contest Letter

Saved Soaked Chicks

Last year I bought thirty extra nice white Wyandotte chicks, and put them with a hen. When they were about two weeks old a terrible rain and wind storm came up. I started out to look for them but was driven back by the storm. When it had subsided a little, I ventured out again and began my search. I finally found them in the pasture fence, most of them stretched out, and none able to walk. I gathered them up in my apron and ran for the house. I spread an old wool blanket on the kitchen table and deposited the chicks on it; got my little electric heater and turned it on them; it wasn't long until they began to cheep. I wiped their little rain-soaked bodies off, and held the heater over them. They were soon up on their feet as brisk as ever.

MRS. IVA STUBBLEFIELD
308 Dinsmore St.,
Bloomington, Ill.

Electricity and TNT

In one dictionary, dynamic, dynamite, and dynamo are three successive words. Carrying the idea a little farther, one kilowatt-hour contains as much energy as 2.6 pounds of TNT. A domestic kilowatt-hour sells for 3.8 cents (national average), while the TNT costs 64 cents.

C. M. RIPLEY, G. E. Co.

Good Advice!
(Reprint from letter by secretary of Water Systems Council in "Electricity on the Farm.")
"Since you don't put in a new water system often, my advice is to buy one made by a good reliable firm—one that has been in business a good many years—and to buy from a reliable dealer who has had plenty of experience in the water system business in your territory."
MYERS
See this NEW
MYERS—Save in Many Ways!

Myers MULTI-FLOW *Ejecto* is a new kind of water system with famous Myers quality and reliability built into every part. It's sold by dealers qualified to recommend, install and service your Myers system and assure you complete satisfaction. Learn from your nearest Myers dealer how this remarkable new MULTI-FLOW saves you money on first cost, on operating cost, on installation cost, on service and replacement costs. See the *complete* Myers line at your Myers dealer's *now!* Mail the coupon.

Only one moving part . . . no moving parts in well . . . noiseless operation. More capacity with less horsepower . . . costs less to buy and to operate. Exclusive air charger. Amazing performance and economy.

MYERS WATER SYSTEMS

The F. E. Myers & Bro. Co.
1127 Orange St., Ashland, Ohio
Send your new *Ejecto* catalog and name of nearest dealer.

Name _____

Address _____ (13W8-1)

Sufferin' Kilowatts!!

Do you see the three men in the circle at the base of this giant? They are real men—not Pygmies. The machine is an *electric* shovel—a 1940 development—in use in coal stripping operations at Terre Haute, Indiana. The bucket holds 35 cubic yards.

Milk from Soy Beans

Milk from edible soy beans is being manufactured in the United States in a plant at Mt. Vernon, Ohio. It resembles cow's milk. The manufacturing process consists in soaking mature dry beans and grinding them to a pulp. About 90 percent of the protein is then extracted and this liquid cooked after adding fats and carbohydrates in the proper amount. The milk is then condensed and canned or evaporated to dryness.

This plant was installed by Dr. H. W. Miller, who was born in Ohio but who, as head surgeon in an American mission in China, had become interested in soy bean milk as a protein supplement in the Chinese diet where cow's milk was not available. Japanese bombs destroyed the Miller plant in Shanghai in 1937 and Dr. Miller returned to Ohio.

A cow will *graze* only about eight hours in 24, regardless of how good the pasture is, Cornell University scientists have found.

O.: "What was the explosion on Si's farm?

K.: "He fed his chickens some lay-or-bust feed and one of them was a rooster."

Many jobs about your own farm are made easier with equipment driven by Century Motors. With these widely known, time-tested motors, one man can do the work of several and do it faster and easier.

Water pumping for stock has long been a time and strength taking chore. A Century Motor driven pump connected with a float switch keeps the water at the level desired day and night, without regard to the weather; eliminates much of your labor.

Century motors can be used to operate many other time and labor saving machines, such as: pumps, cream separators, churns, feed grinders, tool grinders, shellers, shredders and conveyors.

Save your strength and enjoy your work more with Century Motor driven equipment for your tough jobs. See your equipment dealer or write for full information today.

CENTURY ELECTRIC COMPANY

1806 Pine Street St. Louis, Missouri

Offices and Stock Points in Principal Cities

Century MOTORS

One of the Largest Exclusive Motor and Generator Manufacturers in the World

By JEROME J. HENRY

"Experts" Forget Their Own Works

APPARENTLY the "experts" who appear on the weekly "Information Please" quiz program overlook the obvious answers. Franklin P. Adams, the F. P. A. of "Conning Tower" column fame, and one of the permanent members of the "Information Please" board, set the pattern in the early days of the program when he failed to identify a passage from one of his own poems.

Once when Rex Stout, the mystery story writer, was an "expert," Clifton Fadiman, who asks the questions, read a well-known recipe, except that he substituted soda for the real main ingredient, and so announced. Stout looked blank. It was a recipe taken from Stout's own book, "Too Many Cooks."

Two of the President's sons, Elliott and James Roosevelt, have been stuck at different times on the program by questions that hit close to home. Elliott failed to identify the author of two passages, less than a week old, that had been printed in his mother's syndicated newspaper column, "My Day."

When James Roosevelt served on the board he had an opportunity to name three out of four men now holding prominent public office in Washington who had previously been nominated for vice-president, but not elected. Jimmy recalled that Senator Hiram Johnson was Progressive candidate for V. P. in 1912, but he simply gaped when another expert named Franklin D. Roosevelt as Democratic V. P. candidate in 1920.

The novelist, Louis Bromfield, completely forgot the Edwina of his "The Rains Came," and Carol in his "Night in Bombay," when the quizmaster asked for the names of three women of fiction who did the proposing. Those were, at the time, Bromfield's two latest books.

An embarassing miss even more personal than that of forgetting one's own writings was hung up by the encyclopedic John Kieran. When Fadiman asked the experts to give their wedding dates and the birthdays of their wives, Kieran was prompt with the wedding anniversary, but just red-faced about the other.

Ready for any kind of weather are the Bailey sisters, who help Maestro Ben Bernie with the "New Army Game."

PREMIER'S
Newest All-Purpose
CLEANER

Only
$39.95
and old cleaner
Without Old Cleaner $49.95

A PREMIER FOR EVERY PURSE—EVERY PURPOSE!

Premier manufactures all types of vacuum cleaners in all price ranges. There's a Premier cleaner or combination of cleaners that will meet your cleaning needs and your budget requirements as well!

the AIRE-MATIC "90"

● Here's a full-sized, full-powered, cylinder-type cleaner that's made to order for all those specialized cleaning jobs in your home! The Premier Aire-Matic not only cleans rugs and floors—it does an equally fine job on all those hard-to-clean places and things *above* the floor. Complete with hose and set of 7 convenient attachments it is top-quality in performance and in appearance as well! Before you buy *any* cleaner, be sure to see the Premier Aire-Matic "90"!

PREMIER

PREMIER DIVISION, ELECTRIC VACUUM CLEANER CO., INC.
1734 Ivanhoe Road • • • Cleveland, Ohio
Please send me complete information and literature on:
☐ The Premier Aire-Matic "90"; ☐ other Premier cleaners. Also send me names of nearest Premier dealers.

Name.....
Address.....
City.....*State*.....

THERE'S AN ELEPHANT ON YOUR FARM

Not literally a circus pachyderm with an unquenchable thirst—but an unending demand on your farm for fresh water—water for the live stock—water for the home. If you have been a "bucket toter" or if you have an old style pump, you will want to see the new

Goulds Jet-O-Matic Dual Service Water System

You can put it anywhere, regardless of the well location. Can be changed from shallow well to deep well service quickly and inexpensively at any time.

It's all that a water system should be

- Absolutely quiet
- Can't lose its prime
- Never needs air charging
- Can't build up dangerous pressure

. . . and it's low in price.

See at your Goulds Pump dealer. Send the coupon—we'll give you the dealer's name and send you a complete folder on this new and better water system.

GOULDS

GOULDS PUMPS, Inc.
340 Fall St., Seneca Falls, N. Y.

Please send me the name of the nearest Goulds distributor and full information about the new Goulds JET - O - MATIC Water System.

Name .....

Address ..... *State* .....

63

Clean and Grade Your Own Seed with a VAC-A-WAY

Standard equipment, 12 screens for wheat, oats, corn, timothy, rye, barley, soy beans, clover, alfalfa, etc. Ball-bearing fan-shaft, bronze cams. Three models, hand operated, electric motor and gasoline engine drive. Good capacity. Your best seed properly graded means less dockage and increased yields.

J. W. HANCE MFG. CO. WESTERVILLE OHIO

Fast milking + easy cleaning =

less work, more $ with PAGE Portable Milker

Milks 20-25 cows an hour. Safe vacuum control for each cow gets *more milk*. Double or single units. Sanitary *visible* chamber . . . no dirt-catching corners. *Clean in a jiffy.* Gas or electric. Write for *free* colorful catalog.

Write Today for FREE Colorful Catalog

Pioneer Mfg. Co.
Dept. MK-71
WEST ALLIS, WIS.

Why Join the Army?

"PRIVATE" LINN (NBC College Humor program) Borden reports that a top sergeant is only a guy who's paid to bawl you out for things you get bawled out for free at home!

• • •

News from Behind the Scenes in Industry

THE exciting necessity of beating America's ploughshares into swords gives radio a new kind of new show—"News of the Week in Industry" each Thursday night at 8:30 o'clock EDST on the NBC-Blue network.

The series draws its news from America's second line of defense, the fields and the factories where millions of workers turn their skills to the building of machines to safeguard our way of life.

It digs behind the dramatic headlines of battles on air and sea and land for the vital facts that measure the strength of a nation. A maker of refrigerators delivers his first 105-millimeter howtizer to the Army; the Pullman Company completes the first of thousands of trench mortars; light and heavy tanks roll off assembly lines at American and Baldwin, formerly builders of railway locomotives. It is big news of the kind that escapes the attention of the average newspaper reader.

The series gives foreign reports full of meaning. Vital war supplies —oil, steel, rubber, machine tools— are transshipped through neutral ports to avowed enemies of the American way of life. In a foreign nation, the economic rulers have worked out a plan for post-war dominance of world trade. American cotton is to be supplanted by a new synthetic fiber produced on a vast scale. This would mean the wreckage of a large section of the United States.

The series also points to America's future opportunities. For instance, it will tell of America's purchase of Brazilian industrial diamonds to offset Brazil's purchase of American goods; and of America's building a $20,000,000 steel plant in the same South American country.

Such stuff does not, of course, comnete in dramatic quality with the report of a declaration of war or the account of a running battle at sea. But a people who realize that strength lies in their country's capacity to produce are already giving "News of the Week in Industry" a rousing welcome.

Just in Case of Fire

It is a good idea to have a hose always handy and ready to use in

emergencies. Quick couplings may be obtained so the hose can be snapped into place quickly if one does not care to keep it attached to the faucet. A ¾ inch hose will deliver almost 50 per cent more water than a ⅝ inch hose; and a one inch hose about 2½ times as much. Have it ready. A squirt in time saves nine.

Everybody Happy at Our House

Vacuum Cleaner Sprays the Tractor

GUESS my family did think that I was rather greedy. When we got power, I wanted so many things. How long had I looked with jealous eyes on the homes of my friends and wondered if such blessings were ever to come my way.

We lived at the end of the trail. My mother had gone to her grave without knowing the thrill of pressing a button to see her home flooded with light. My own hair was growing gray waiting for Power. Then one day, one glorious day, it came.

Right away, without asking anyone's permission, I signed up for a range, a refrigerator and a water heater. Such luxury for a farm home! Ice cream that did not have to be cranked! Hot biscuits that could be eaten in a cool house! And best of all a bath any hour of day or night It just seemed too good to be true.

Then when everyone seemed to treat me as if he were saying to himself: "Surely that ought to satisfy you, Mom," along came a man with a vacuum cleaner. I also thought that I had about all that was coming to me so I refused to consider it until the men came home. Then all out of a clear sky, my husband bought me one of them.

The boys looked as if they thought we had gone electric minded to the point where it was becoming electric madness but when spring came and I was able to do my own calcimining instead of asking one of them to come in from the field to do it, my stock went up a little.

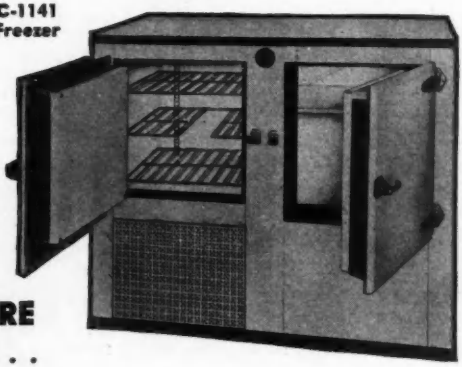
I still felt, however, that I had received rather more than my share of the benefits electric. Then one day they were overhauling their "cat." A very smiling boy came in at a very unexpected time of day and asked me if I thought it would hurt the vacuum cleaner if they used it on the tractor. I assured him that it would not. The smile became a grin. We got a heavy sack and legs and arms of old union suits to cover the vacuum from tip to toe and away it went to do field duty. They filled the glass jar with gasoline then sprayed it through the intricate parts of the tractor's anatomy until it looked like new.

Now everybody is happy at our

NOW YOU CAN
Fast Freeze
YOUR OWN MEATS AND OTHER FOODS

3-ZONE FREEZER SAVES MANY TIMES ITS LOW COST

Model C-1141
3-Zone Freezer



10 cu. ft.
300 lbs.
FROZEN MEAT CAPACITY

Three
TEMPERATURE ZONES! . . . .

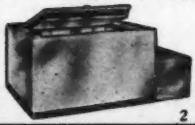
1. FAST FREEZING 2. FROZEN STORAGE 3. NORMAL REFRIGERATOR

Enjoy Better Living, more variety at meals by freezing and storing your surplus meats, vegetables and fruits RIGHT IN YOUR OWN HOME. Save on food costs. LOW OPERATING COSTS.

SPECIAL OFFER TO DEMONSTRATION AGENTS!

SANITARY REFRIGERATOR CO.
FOND DU LAC, WIS.

YOU CAN BUTCHER ANY TIME!



No waiting for Freezing Weather! Offers Fast Freezing and Frozen Storage. Large capacity—360 to 560 lbs.

2 ZONE FREEZER

Sanitary Refrigerator Co.
Dept. E
Fond du Lac, Wisconsin

Send information, without obligation, to:

Name.....

Address.....

City..... State.....

house. There is perfect cooperation on everything. We have even added an electric fly killer. A very expensive brand of fly spray it is but the way it does the work makes a person ready to go without shoes in order to have one. The flies may be, "Mom's flies," but Dad and the boys certainly enjoy seeing them burned at the stake.

AGNES JUST REID,
Firth, R.1, Idaho.

* * *

NOTE: Gasoline should not be sprayed inside of a building or anyplace where the fumes may form an explosive mixture. Small sparks from the motor brushes may ignite it and cause an explosion.

Lightning Rods Effective If Properly Constructed

Lightning rods have an efficiency of 97 per cent if properly constructed and installed, states the National Board of Fire Underwriters in its 75th anniversary bulletin.

Inspection of rodded buildings which have been struck by lightning generally reveal one or more defects, such as lack of grounding to permanent moisture; insufficient number of points, particularly at chimneys, cupolas, cables and other elevations; points and connections not mechanically or electrically secure; failure to connect downspouts, door tracks and other metal parts, and metal clothes lines to ground.

Lightning causes damage most frequently in rural districts and in isolated structures. Churches with tall spires and factories with towering stacks are particularly subject to strokes, while usually the tallest trees in a forest are the ones struck.

In town, the safest place to be during an electrical storm is in a steel frame skyscraper, although a steel car on rails of like material is about equally safe.

Mrs. Malone: "What did your uncle die of, Mrs. Flanagan?"

Mrs. Flanagan: "Gangrene it was, Mrs. Malone."

Mrs. Malone: "Thank hivins for the color, anyway, Mrs. Flanagan."

Sally—Now that we're engaged, Sandy, you'll give me a ring, won't you?"

Sandy—Certainly, Sally. What's your 'phone number?

"What are you doing now, Sam?"

"Ahs an exportah."

"An exporter?"

"Yessuh, Ah was fired by de Pullman Company."

Questions and Answers

6 v. Motor on 110 v. Line?

Question: *I have a six volt motor large enough to run a small refrigerator. Can I run that by the use of a transformer from the* 110 *volt line? If not why? And what arrangement should I make in order to operate it from the* 110 *volt line.*

E. F. McC., ILL.

Answer: Six volt motors large enough to run a refrigerator are, in practically all cases, direct current motors. If it is marked direct current, or D. C., on the name plate it will not operate through a transformer from a 110 volt line. The wiring and construction of alternating and direct current motors are different and they cannot be used interchangeably. All universal motors may be used on either alternating or direct current.

If the motor should be an alternating current, or universal type, you

NOW! A FAIRBANKS-MORSE Shallow Well Water System FOR ONLY $51

COMES READY TO PLUG IN!

Here's a water system of Fairbanks-Morse quality at a remarkably low price! It's *complete,* including a long-lived, piston-type, 200-g.p.h., double-acting pump that's gearless and practically noiseless; dependable F-M electric motor with overload relay and automatic reset; 8-gal. pressure tank galvanized inside and out; air valve; relief valve. It's self-starting, self-stopping, self-oiling, self-priming. And it comes completely assembled, ready to plug in! See it at your F-M dealer's, or write to Fairbanks, Morse & Co., Dept. G107, 600 S. Michigan Ave., Chicago, Ill.

The Only COMPLETE Line of HOME WATER SYSTEMS

F-M makes all types—ejector and piston—for shallow and deep wells—in a full range of sizes. Unbiased advice . . . a name that means *dependability.*

FAIRBANKS, MORSE & CO.

Manufacturers of Precision Equipment for 111 Years

BUYERS' INFORMATION SERVICE

As a reader of this magazine you are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. Then, if you do not find what you want, just use the coupon below to tell us what you need and we will see that you get the information you want.

Use This Reader Service Coupon

ELECTRICITY ON THE FARM
Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

....

....

My name is.....

Address .....

.....

I get electricity from.....

Check here ☐ if dealer. 7-41

can operate it through a transformer from a 110 volt line. It would probably be cheaper, however, to buy a 110 volt motor than to buy the transformer.

Deep Well Pump

Question: *Is it possible to pump water from a 160 ft. well up hill to a house basement 175 ft. from the well? How much power would be needed for this kind of a water system?* J. McC., Nebr.

Answer: In general, for pressure of 20 pounds at the house and a delivery of three gallons of water per minute you would need a one hp motor on your deep well pump. The amount of power for the pumping installation which you inquired about will depend on how much pressure you want at the house, the size pipe you use, how high the water rises in the well and other factors. Pump companies will send you a sheet to fill out from which they can tell you exactly what would be required.

Wind Electric Plants

Question: *Could you advise me on the advisability of putting up a wind mill for power for my 32 volt plant? Are they satisfactory?*
W. H. S., Ohio.

Answer: If an electric power line goes within a reasonable distance of your farm it will probably be more satisfactory in the long run for you to get service from a central station. Counting interest on the first cost of equipment and upkeep on batteries, it will cost more to generate your own electricity than to pay for it from a power company. If central station service is not available you can charge the batteries of your 32 volt electric plant with a wind generator. The satisfaction you will get from this type of plant will depend largely upon the amount of wind you have, where your wheel will be located, and the duration of calm periods which will occur.

Electric Heater Connected to Water Back

Question: *We are considering the installation of an electric hot water heater of about 60 gallons capacity. We had in mind a heater that could also be connected with the water front in our kitchen range.*

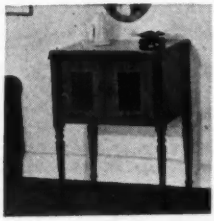
Do you know of any such heater being manufactured? R.W.S., Ind.

Answer: Most of the water heater manufacturers could supply you with an electric heater having a cold

"Ahhh! Wasn't I smart to buy a Singer!"

Among the many advantages of an electrical farm home is a Singer electric for the women folks. It's so *easy* for them to make clothes they'll be proud of—with Singer's magic sewing-tricks! You can own a famous Singer—the *best* in sewing machines—for just a few cents a day: a handsome Desk Model, Console, or Featherweight Portable! Singer gives you a liberal trade-in allowance on your old machine—and low budget-terms. Drop us a card for a free demonstration!

Beautiful to look at, and *wonderful* to sew on—fast, smooth, *simple!* Remember—this Singer electric Cabinet can be yours, for just a few pennies a day!



Let us demonstrate other Singer appliances right in your own home—vacuums, irons, sewing machines. Just drop us a card. No obligation, whatsoever!

SINGER
SEWING MACHINE CO., 149 Broadway, New York
"1500 Singer Shops and Authorized Distributors"

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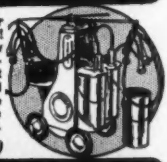
BLIZZARD ENSILAGE CUTTER —HAY CHOPPER
OPERATES EASILY, ECONOMICALLY, with a 5 H.P. Electric Motor
Example: At Mich. State College filled 4 silos, 188 tons silage, power cost $5.34.
Write regarding our new direct drive. Free catalog direct or at your dealer's.
BLIZZARD MFG. CO.
Box E, Canton, Ohio

GET HAPPY MILKING WITH CLEAN-EASY



The Biggest Milker Advancement in 1941! Clean-Easy Milker now equipped with sensationally new rubber teat cup with squeeze and suction combined to give faster, cleaner, more natural milking action.
Write Dept. 30
BEN H. ANDERSON MFG. CO.
MADISON, WIS.

water connection at the bottom, and a top hot water connection without a heat trap. All that would be necessary then would be to connect your furnace coil to this top and bottom piping.

This system is not recommended, however, for two reasons. One is that without a heat trap, you will have a constant flow of hot water upward, and heat loss from your piping system. The other is that the insulation on your electrical tank is such that, unless you have a very small coil in your kitchen range, you are apt to boil the water in the tank, keeping the sediment stirred up, causing a discoloration of some water and resulting in steam coming out of the hot water faucet.

A better system is to use the regulation range boiler for preheating the water, connecting the cold water line of your electric heater to the hot water discharge of your range boiler.

Mazda or Heat Lamps for Brooders

Question: *What I want to know is—suppose I put enough lamp bulbs under a hover to amount to 200 watts—isn't there a cheaper method of producing the heat thus created? Around here the home-made brooders use common light bulbs. Shouldn't the local company sell heat bulbs also?* MRS. P. H., IND.

Answer: The most satisfactory heaters for home brooders, based on past experience, are elements being made by manufacturers particularly for that purpose. The Lyon Rural Electric Company, San Diego, California, has a number of different types of home made units and the Trumbull Electric Company at Plainville, Connecticut, makes a fan-type unit called the "Brooderator." If you wish to use lamps, Mazda lamps will be satisfactory. Regular heat lamps are made in wattages from 250 upwards. The heating done by lamps is of two types. The air and surrounding materials are heated to some extent, but much of the heat applied to the chick is direct radiation from the lamp. The amount of heat which the chick receives is not accurately registered by a thermometer in the brooder—one must judge the results by the comfort of the chicks themselves. All heat lamps make light as well as heat. The light from heat lamps is not so intense.

Electric Pump Gains Month in Cattle Feeding

"I have a large herd of beef cattle that really need water in warm weather. We never could keep enough water in the tank until we got an electric deep well pump, which now always has the tank full. It paid for itself in a short while.

"With a plentiful supply of water through this dry, hot period, I marketed these cattle in December—a month earlier than might have been—and got a very good price for them.

"It is also the cheapest operating machine for pumping water I ever had."

JACOB LUDWIG,
Forreston, Illinois.

THE carrier pigeon was first used as a military messenger during the siege of Paris in 1870 and 1871. Along the western front in the current European war more than 100,000 pigeons are on duty, twice the number used in the World War. The winged courier keeps pace with modern military developments.—*Down the Road.*

. . . The preacher finished his sermon with "All liquor should be thrown in the river," and the choir ended by singing "Shall We Gather at the River?" —*Analyst.*

There's a Reason why

DELCO WATER SYSTEMS

Pay for themselves so Quickly

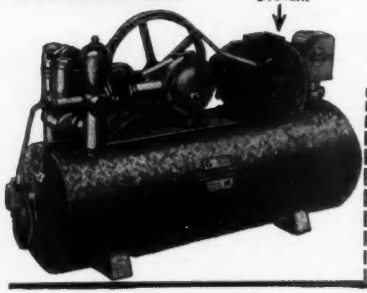
A water system pays for itself by saving time and hand labor, increasing milk and egg production, helping fatten stock, etc. It stands to reason that the better the water system is built, and the more economical it is to run, the sooner it will pay for itself.

Delco and General Motors designed Delco Deep and Shallow Well Pumps especially for farm use and saw to it they were not only economical to buy and operate but so well and strongly built they would stand up to their jobs for years. They also provided capacities of from 180 to 1600 gallons per hour, so each farm could have the most economical size for its particular needs.

DELCO-JET SYSTEM

←DEEP WELL SYSTEM

SHALLOW WELL SYSTEM



Delco Dealers have for years been studying the water supply and recommending the most economical kind and size water system to use. Your Delco Dealer will be glad to advise with you without obligation.

DELCO WATER SYSTEMS

Product of General Motors

DELCO APPLIANCE DIVISION
General Motors Sales Corporation
396 Lyell Ave., Rochester, N. Y.
Please send, without obligation, full information on Delco Water Systems

Name .....

Town .....

State ..... R. F. D. .....

Don't delay finding out how economically and easily you can start NOW to enjoy running water. A Dayton Life-Long System gives you PLENTY of water under pressure, WHEREVER and WHENEVER you need it. Capacities from 250 gal. per hour and up. The complete Dayton Line includes shallow and deep well models, jet pumps, cellar drainers, and water softeners. Easy terms. Mail coupon NOW for free, helpful, booklet.

World's largest manufacturers of Automatic Electric Water Systems.

DAYTON
THE LIFE-LONG SYSTEM

THE DAYTON PUMP & MFG. CO.
Dept. EF-7, Dayton, Ohio
Send book on planning Water Systems.

Name_____

RFD & Box No._____

City_____ State_____

Monarch ELECTRIC and COAL-WOOD COMBINATION RANGES

Today's most popular "high line" range. Built to provide year 'round convenience and comfort in the farm kitchen.

See your "Monarch" retail outlet or—

Write for booklet illustrating complete line.
MALLEABLE IRON RANGE CO.
1241 Lake Street Beaver Dam, Wis.

Sterilization of Milk Utensils

THE season for maximum tendency for spoilage of milk is at hand. Hot weather favors the growth of bacteria and milk is an ideal medium for bacteria to grow in. There are, of course, good and bad bacteria. All milk contains them, but most of the bad ones are introduced after the milk is drawn. Bacteria may be air borne, on the dust, but the really bad ones, and the ones which are most prevalent are the ones to be found in milk pails, cans and other utensils which have not been thoroughly cleaned and sterilized. A few bad bacteria in the seam of a strainer or pail that is not perfectly cleaned and dried will increase at a rate that makes the guinea pig or even the house fly seem like barren, inactive, stone-age fossils.

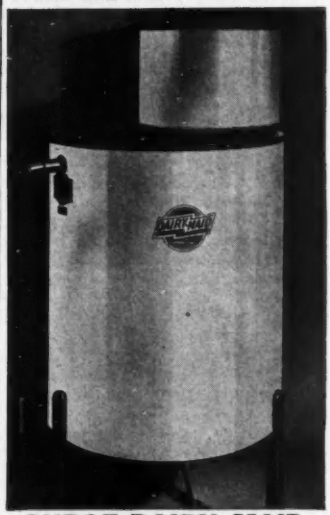
The basis for low bacterial counts is cleanliness,—cleanliness in milking, cleanliness of person of milk handlers, cleanliness of utensils. The greatest aids to cleanliness are plenty of pure running water, and hot water or steam. Electricity can serve a very useful purpose in providing both. The automatic, electric water system need only be mentioned. It is a real helper and labor saver in many places on the farm in addition to the milk room. Electrically produced hot water and steam for sterilization need further attention at this time of the year because they are less familiar to most people than other electrical equipment.

All-Around Cleanliness Desirable

Sterilization of utensils may be accomplished either with live steam or by immersing utensils in water at 180° or hotter for about one minute. They must be kept at this temperature long enough so the metal of the utensil is completely heated to this temperature. For small dairies with few utensils, hot water properly used is effective for sterilization. Utensils should be rinsed first with cold water, then washed thoroughly in warm water with approved washing powder and a brush, and finally rinsed, and sterilized in hot water or steam. A hot rinse just before use is very effective in removing any bacteria which may remain.

Electric water heaters for the dairy are available in many sizes and types. They include the electric teakettle, Electro-pail, 2 to 10 gallon "pour-in" insulated heaters, 2 to 10 gallon top opening tanks with bottom draw-off valves, pressure type heaters of any size, electric boilers. The price range of this

NOTHING
takes the place of
HOT WATER
When and Where You Need It



SURGE DAIRY-MAID WATER HEATER
New 1941 Model

Hot water is absolutely essential to clean milk. Only hot water will melt and get rid of that greasy, dirty film of butter-fat that clings to utensils and forms a perfect breeding ground for bacteria. Cold water hardens it . . . makes more work . . . and more bacteria. But don't waste time lugging hot water to utensils or utensils to hot water. Use the Surge Dairy-Maid Electric Water Heater and have hot water always on tap right where you need it. Nothing in years has made such a hit with dairy farmers everywhere because they can now protect their milk . . . at all times . . . with less effort . . . and less expense. The secret is low wattage heating, plus automatic control, plus heavy insulation. No expensive installation. Just plug it in. All this saves you dollars! We'll prove it with a Free Demonstration.

Mail Coupon for Free Book "THE MAGIC of HOT WATER"

BABSON BROS. CO. 2843 West 19th St. Dept. B-551, Chicago
Please send me your Free Book, "THE MAGIC OF HOT WATER," also your Free Demonstration Offer.

Name.....

Town.....

R. F. D. ... State.....

equipment is from less than $5 to any amount one wants to pay.

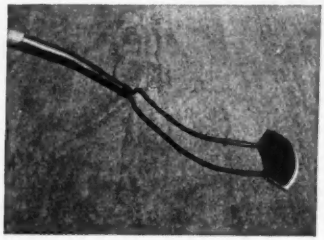
Several types of steam sterilizers are being made. The two most popular types are the controlled-steam cabinet used in the East, and the low wattage steam boiler or accumulator used widely in Western states for heating water and providing steam for ordinary steam sterilizer cabinets. Both are very effective in doing a good job and in saving labor.

More About a "New Hoe"

Dr. E. O. Fippin, widely known authority on soils and joint author of a book on the subject has just sent us this letter. If this hoe is that good a tool, you should be given a "second exposure" to it. It was first published as a job for an electric welder.

"On page 10 of the May issue of your magazine under the title "New Kind of Hoe" is described a hoe made from a two tine fork.

"First, let me go the writer one



better, and say that one can work three times as fast, and much easier and better with this type of hoe than with an ordinary chop hoe.

"Second, this type of hoe in various patterns has been on the market many years from some of the large fork and hoe manufacturers. I used to see it in use for weeding onions and lettuce on muck soil in New York State over 25 years ago.

"Several years ago in Virginia I purchased one of these 'Scuffle' hoes, for use in my garden. Ever since, I have been enthusiastically recommending its use to my friends, who now are taking it up, among the latest — George Rommel — (former Chief of the Bureau of Animal Industry, U. S. D. A.)

"This tool is ideal for weed killing, and leaves a perfect mulch, with a minimum disturbance of the moist soil below and hence a minimum waste of soil moisture.

"The use of this tool should be better understood, and all dealers in hand tools should stock it and bring it to the attention of patrons."

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

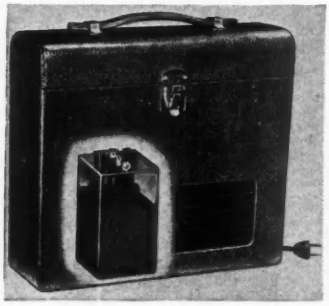
Hair Drier on Stand

A combined blower and heating element for drying hair, shoes, wet

chicks, or "what have you." Will produce either a warm breeze or cool breeze. May be used on the base or removed for hand operation. Price $6.95.

Portable Radio with Rechargeable Battery

The radio shown is equipped with an airplane type non-spillable storage battery with transparent plastic case and with a built-in automatic battery-charger. The set is 13" x 13" x 5", weighs 17 lbs. and is priced about



the same as other high quality portables. It has a superheterodyne 5-tube circuit and will operate 15 to 20 hours on one charging at a cost of about ½ c. Battery may be charged while radio is in use by plugging into regular AC circuit.

New Publications

(Publications are obtainable from the addresses given in the descriptions.)

PRACTICAL ELECTRICAL WIRING. Revised 2nd Ed. based on 1940 Elec. Code. By H. P. Richter. McGraw-Hill Book Co., New York. $3. In three parts: Theory and Basic Principles; Residential and Farm Wiring; Non-Residential Wiring. Clearly written, practical, well-illustrated book of 521 pages for anyone learning or doing wiring.

PREPARATION OF STARTER FOR CHEESE, BUTTERMILK, BUTTER. Sta. Bul. 379, Oregon State College, Corvallis, Ore. 24 pp., illus. Describes electrical starter incubators, sterilizers, etc.

ELECTRIC PIG AND LAMB BROODERS. Bul. 160, Agric. Experiment Station, Pullman, Washington. 8 pp, illus. Tells how to make lamp heated brooders.

THE HOME IDEA BOOK. 1941. Johns-Manville, Corp., 22 E. 40th St., New York. 54 pp, illus. Excellent ideas on construction details and description of J-M fireproof building materials. Houses shown are mostly town houses.

A SMALL THRESHER FOR TENNESSEE FARMS. *Extension Leavet* 2, Univ. of Tennessee, Knoxville, Tenn. 4 pp. A "trailer" thresher to operate with 7½ hp motor.

Milk production was equivalent to 87.4 gallons per person according to 1940 Census, compared with 90 gallons ten years earlier. Milk production was reported on 4,663,701 out of a total of 6,096,799 farms in the U. S.

Annual turkey production in the U. S. was shown to have increased more thai 66 percent—from less than 17 million ten years ago to nearly 28 million, according to the last Census.

CLASSIFIED ADVERTISING

ELECTROCUTE FLIES—*"Cheaper than Spraying"*—LYON Fly Electrocutors cost less than 1c per day to operate. *Low delivered price!* Order direct or see your dealer. COMPLETE POULTRY SUPPLIES—Infra-Red Ray and Fan Brooders, Alarms, *Parts and Plans for building your own brooder.* Over 150 items, FREE 32-PAGE CATALOG! Lyon Rural Electric Company, Dept. EF, Greensboro, N. C., or San Diego, California.

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RHYME CONTEST

What Would You Say?

Fun for all—the whole family can take part in this contest. Cash prizes will be awarded for the best suggestions for a last line to complete the verse at the bottom of this page.

ay Contest Awards

for the last line of this verse:

ummer soon will be on hand
With sweltering days and nights.
m glad we have electric fans
.....

IRST PRIZE—$20 Cash

"Our switch a breeze invites!"
MRS. ANTON ROELKE,
RFD2, Mazomanie, Wis.

ECOND PRIZE—$5 Cash

"Cause 'current-air' delights."
MRS. T. P. LEWIS,
RFD1, Baxter Spgs., Kan.

Five Consolation Prizes—$3 Each

"Our work gets fewer slights."
ELEANOR CARTER,
RFD3, Ash Grove, Mo.

"And have 'MOUNTAIN AIR' delights."
CARRIE K. JANSSEN,
Lorraine, Kan.

"When the mercury hits new heights!"
HEGGIE R. WARD,
RFD3, Thorndike, Me.

"To ward off summer blights."
MRS. A. F. BENNETT,
RFD2, Pewaukee, Wis.

"To lower Fahrenheits."
MRS. FRANK L. HALL,
Crawford, Nebraska

HONORABLE MENTION

The following names are deserving of honorable mention for the lines submitted: Revia Harbert, RFD1, Lumberport, W. Va.; Charles E. Cole, RFD3, Dardanelle, Ark.; George Irey Benham, RFD2, West Chester, Pa.; Mrs. Daphne Nordin, RFD5, Box 65B, West Duluth, Minn.; J. E. Barkston, RFD1, Jenkinsburg, Ga. Mrs. Martha P. Tuckwiller, RFD4, Fairview, W. Va.; Mrs. D. C. Stanion, RFD1, Box 362, Kerman, Calif.; Esther Bille, RFD2, Fond du Lac, Wis.; Susan Minnick, RFD2, St. Marys, W. Va.; Jane Stokes, Havana, Ala.

RULES—JULY CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $20 cash; the second prize, $5.

In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries should be sent to the Contest Editor, ELECTRICITY ON THE FARM, 6 No. Michigan Avenue, Chicago, Illinois, and must be postmarked before July 30.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM.

Winning names and entries will be announced in the September issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

She scrubbed the clothes each Monday
Until her hands were sore
But now she's bought a washer

My suggestion for a fourth line to the above verse is:

.....

.....

(a) What percentage of your farm family income, approximately, is obtained from the sale of:

Dairy Products .....% *Poultry Products*.....%
Small Fruit & Truck.....% *Other Income* .....%

My name is.....

R.F.D..... Post Office.....

County..... State.....

I get electricity from.....(7-41)

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The Declaration of Independence freed our country from old world domination, gave it a chance to grow and develop as a new world should, with unhampered aims and ambitions.

Since its very beginning, electric power has been writing a declaration of independence for the American people. Independence for agriculture, business and industry, from the hampering effects of slow and costly methods of production. Independence for the family and the homemaker from the discomforts and drudgery of old-time living. And it is a declaration that is still being written, being improved and amended as the benefits of electric service are extended, and new inventions made.

Your Electric Company is proud of the part it has played in the development of such electrical independence, and promises that the future will see only increase in the quality and quantity of service.

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or your electrical equipment dealer if you need further information. Or, if you prefer, address your inquiries to ELECTRICITY ON THE FARM, 24 West 40th Street, New York, or 6 No. Michigan Avenue, Chicago.

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